

ABSTRACT OF THE DISCLOSURE

Methods and compositions are described for the treatment of type I insulin-dependent diabetes mellitus and other conditions using newly identified stem cells
5 that are capable of differentiation into a variety of pancreatic islet cells, including insulin-producing beta cells, as well as hepatocytes. Nestin and GLP-1 receptor have been identified as molecular markers for pancreatic stem cells, while cytokeratin-19 serves as a marker for a distinct class of islet ductal cells. Methods are described whereby stem cells which express one or both of nestin and GLP-1R
10 can be isolated from pancreatic islets and cultured to obtain further stem cells or pseudo-islet like structures. Methods for *ex vivo* differentiation of the pancreatic stem cells are disclosed. Methods are described whereby pancreatic stem cells can be isolated, expanded, and transplanted into a patient in need thereof, either allogeneically, isogeneically or xenogenically, to provide replacement for lost or
15 damaged insulin-secreting cells or other cells.